CLAIMS

The following is claimed:

1.   A method of providing a software bridge/router within a small office,

5   home office computer network comprising a series of computers, comprising the steps of:

determining a media access control address of each of said series of computers

within said computer network;

receiving a request from a first computer within said computer network, to

communicate with either a second computer within said computer network, or a wide area

10   network (WAN);

in response to said request being to communicate with said second computer,

determining whether the media access control address of said second computer has

previously been determined;

in response to said request being to communicate with said WAN, performing a

15   protocol conversion and providing communication between said first computer and said

WAN; and

if said media access control address of said second computer has previously been

determined, providing communication between said first computer and said second

computer.

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2.   The method of claim 1, wherein said computer network comprises at least a first local area network and a second local area network.

3.   The method of claim 1, wherein communication between said small office, home office network and said WAN is provided by at least one xDSL modem.

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4.   The method of claim 3, wherein said connection to said wide area network is a digital subscriber line.

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5.   The method of claim 1, wherein said step of determining a media access control address of each of said computers is performed by a first computer that then stores said media access control addresses within an address table.

6.   The method of claim 5, wherein said first computer is the first computer within said computer network to locate a digital subscriber line at the initialization of said computer network.

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7.   The method of claim 6, wherein said first computer provides a bridge/route between said small office, home office, and a wide area network.

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8.   The method of claim 1, wherein said communication between said first computer and said second computer comprises the transmission of data.

9.   A software bridge/router system for providing a logical connection

5 between a first local area network (LAN), having a first series of computers therein, a second LAN, having a second series of computers therein, and a wide area network, wherein said first LAN and said second LAN are located within a small office, home office (SOHO) computer network, comprising:

a master computer which is capable of identifying all computers within said first

10 LAN and said second LAN; and

a first slave computer located within one of said first LAN and said second LAN, and a second slave computer located within one of said first LAN and said second LAN,

wherein said master computer provides for communication between said first slave computer and said second slave computer, and between said SOHO computer

15 network and said wide area network (WAN).

10.   The system of claim 9, wherein said SOHO is connected to said WAN via a digital subscriber line (DSL).

11.   The system of claim 9, wherein said master computer is determined during initiation of said first and second LANs, said master computer being a computer within said first LAN or said second LAN which first detects said digital connection.

12.   The system of claim 9, wherein all of said first series of computers and said second series of computers are identified by a media access control address.

13.   The system of claim 9, wherein each of said first series of computers and said second series of computers are capable of being said master computer.

14.   The system of claim 9, wherein computers within said first series of computers are capable of communicating with other computers within said first series of computers without the assistance of said master computer, and said second series of computers are capable of communicating with other computers within said second series of computers without the assistance of said mast computer.

15.   The system of claim 11, wherein a refresh cycle is performed periodically to determine whether said master computer has ceased to function, said refresh cycle resulting in determination of a new master computer if said master computer has ceased to function.

16.   A system for providing a software bridge/router within a small office, home office computer network comprising a series of computers, comprising;

a means for determining a media access control address of each of said series of

5   computers within said computer network;

a means for receiving a request from a first computer within said computer network, to communicate with either a second computer within said computer network, or a wide area network (WAN);

a means for determining whether the media access control address of said second

10   computer has previously been determined;

a means for performing a protocol conversion and providing communication between said first computer and said WAN; and

a means for providing a communication between said first computer and said second computer.

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17.   The system of claim 16, wherein said computer network comprises at least a first local area network and a second local area network.

18.   The system of claim 17, wherein said software bridge/router provides a bridge/router between said first local area network and said second local area network, and between said computer network and a wide area network.

5   19.   The system of claim 18, wherein said computer network comprising a single local area network.

20.   The system of claim 18, wherein said wide area network is connected to said computer network via a digital subscriber line.

10   21.   The system of claim 16, wherein said means for determining a media access control address of each of said computers is performed by a first computer that then stores said media access control addresses within an address table.

15   22.   The system of claim 21, wherein said first computer is the first computer within said computer network to locate a digital subscriber line at the initialization of said computer network.